

# THE RESOURCE

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MMUA

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3131 Fernbrook Lane North  
#200  
Plymouth, MN 55447  
763.551.1230

## Thief River Falls dam and power plant rides river's highs and lows

**Thief River Falls has been experiencing something increasingly common in Minnesota the last few years: cycles of droughts and floods.**

What has made things interesting is their city's hydropower dam and how these cycles have affected it.

The City of Thief River Falls dam and power plant lies in the center of town on the Red Lake River, and it is fed by the Thief River and the Red Lake River. These two rivers meet upstream about a mile from the dam and begin their confluence.

While the Thief River offers abutments and storage ponds for wildlife refuges, the Red Lake River provides drainage for the Upper and Lower Red Lakes. The flow that ultimately comes into Thief River Falls comes from Lower Red Lake and is regulated by the Army Corps of Engineers.

In the summer of 2021, the



*The Thief River Falls Dam has seen many river fluctuations over almost 100 years of operation. Photo courtesy of the Thief River Falls Times.*

area was in a drought, and the City had to have several meetings with the Corps in order to meet their water needs from the river. During the worst of the drought, the river was only giving the dam 104 cubic feet of water per second (CFS). To get the turbines

spinning, at least 180-200 CFS were needed. Not only is the Red Lake River important for spinning the turbines at the dam, but it also provides Thief's drinking water, as well as drinking water for Crookston and Grand Forks.

After these conversations and some resolution of the drought, the turbines in Thief River Falls started to spin again. However, a few months after the drought, the flood came.

A snowstorm in northwestern Minnesota on April 13, 2022,

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## Impact of the November 2022 elections on municipal utilities

by Kent Sulem

**As a result of the November 8, 2022, state-wide elections, Democrats control all three parts of the Minnesota legislative process.**

Governor Walz was re-elected, having received approximately 52% of the votes cast. Also re-elected were all other state constitutional officers. House Democrats expanded their majority by one vote, meaning they now have a 70-64 seat advantage. The DFL also achieved a net gain of three seats to flip the Senate, giving them control by one vote (34-33).

Senator Kari Dziedzic (Minneapolis) has been elected by her peers to be the new Senate Majority Leader while Senator Bobby Joe Champion (Minneapolis) was named the first Black President of the Senate. Republicans chose Senator Mark

Johnson (East Grand Forks) as their Minority Leader.

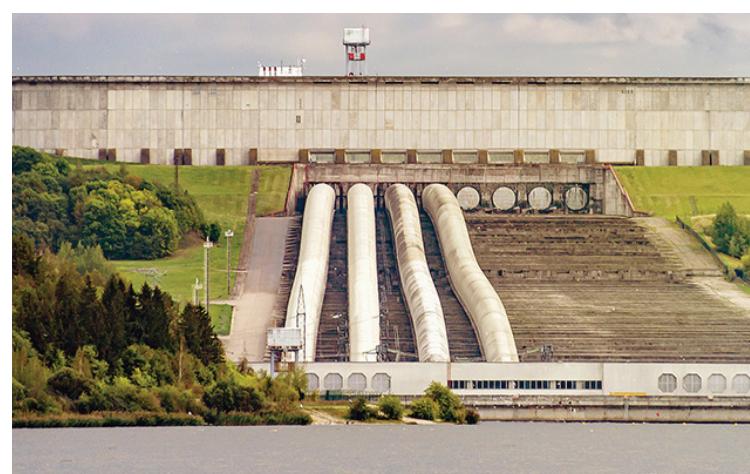
Senate committee chairperson appointments of particular interest to MMUA include Sen. John Marty (Roseville) to the Finance Committee; Sen. Ann Rest (New Hope) to the Tax Committee; Sen. Sandy Pappas (St. Paul) to the Capital Investment aka Bonding Committee; Sen. Erin Murphy (St. Paul) to the State and Local Government and Veterans Affairs Committee; and Sen. Nick Frentz (North Mankato) to the Energy, Utilities, Environment, and Climate Committee.

The pairing of Climate and Energy with the Environment Committee is a new twist and does not directly align with the House committee structure.

On the House side, Rep. Melissa Hortman (Brooklyn Park) remains Speaker of the House.

*Continued on page 14*

## Gregory County pumped storage project to move ahead



**The Gregory County pumped storage project in South Dakota will move ahead after the South Dakota Public Utilities Commission (PUC) ruled that under current law no permit is required under its jurisdiction.**

Gregory County, which is about 140 miles west of Sioux

Falls, is the planned site of a pumped storage facility along the Missouri River on the west side of Lake Francis Case. Water will be pumped from the Missouri and held in a new reservoir to be stored until it is needed for electricity generation. The project will produce and distribute up to 2,100 megawatts (MW) of electricity.

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#### **Staff**

##### **Chief Executive Officer**

Karleen Kos, kkos@mmua.org

##### **Director of Administration**

Rita Kelly, rkelly@mmua.org

##### **Director of Finance**

Larry Pederson, lpederson@mmua.org

##### **Director of Gov't. Relations and Senior Counsel**

Kent Sulem, ksulem@mmua.org

##### **Director of Training and Safety**

Mike Willetts, mwilletts@mmua.org

##### **Government Relations Attorney**

Bill Black, bblack@mmua.org

##### **Multimedia Journalist and Content Creator**

Reid Baumann, rbaumann@mmua.org

##### **Marketing and Member Relations Manager**

Christian Glanville, cglanville@mmua.org

##### **Accounting Assistant**

Karen Heiden, kheiden@mmua.org

##### **Safety Services Coordinator**

Theresa Neddermeyer,

tneddermeyer@mmua.org

##### **Assistant Director of Quality Assurance and On Demand Services**

Anthony Lenz, alenz@mmua.org

##### **Assistant Director of Education and Outreach**

Cody Raveling, craveling@mmua.org

##### **Assistant Director of Technical Services**

Jay Reading, jreading@mmua.org

##### **Assistant Director of Workplace Safety Services**

Joseph Schmidt, jschmidt@mmua.org

##### **Regional Safety Group Program Leader**

Mike Sewell, msewell@mmua.org

##### **JT&S and Apprenticeship Instructor**

James Monroe, jmonroe@mmua.org

##### **Regional Safety Coord./JT&S Instructors**

Keith Byklum, kbyklum@mmua.org

Travis Denison, tdenison@mmua.org

Dan Nath, dnath@mmua.org

##### **Generation Coordinator/JT&S Instructor**

Paul Helling, phelling@mmua.org

##### **Natural Gas Circuit Rider**

Dennis Danielson, ddanielson@mmua.org

##### **Regional Safety Coordinators**

Janet Aultman, jaultman@mmua.org

Mike Grabow, mgrabow@mmua.org

Brad Gunderson, bgunderson@mmua.org

Rusty Kaderabek, rkaderabek@mmua.org

Brad Levasseur, blevasseur@mmua.org

Bernie Richards, brichards@mmua.org

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## Leadership Academy 2022 graduates

Leadership Academy 2022 was in Plymouth on November 16-17 for the last session of their year-long program. Leadership Academy is MMUA's premiere program on developing leaders by helping attendees understand their strengths and building leadership skills that will last a lifetime.

Congratulations graduates!



Front Row (L-R): Jill Modetzke, Instructor Kent Myers, Ethan Anderson, Jim Gilbert, Paul Johnson

Back Row (L-R): Joni Brandt, Andrea Moen, Bryan Warborg, Matt Flahave, Mark Ward, Steve Munkelwitz, Mike Gabrielson, Jayson Limmer

## Staff Planning Meeting

MMUA staff met on December 2 for its annual planning meeting. As part of a teambuilding exercise, the group put a 1,000-piece puzzle together in around 45 minutes. Not pictured are Bernie Richards and photographer Reid Baumann.



## Christmas Party

MMUA held its annual holiday party at Whirlyball in Maple Grove on December 1.



CEO Karleen Kos, flanked on her left by MMUA Board President Don Martodam and his wife Joy, explains a game to attendees.



Staff enjoyed playing Whirlyball, a combination of bumper cars, lacrosse, and basketball.

# Disruption is not a faster horse for municipal utilities

"If I had asked people what they wanted, they would have said 'faster horses.'" – Henry Ford

During the job interview process last year, I was asked for my opinion on climate change. I responded, "What I think doesn't matter. What matters is the world is in a period of disruptive innovation aimed at eliminating fossil fuels, regardless of the cause. That's going to have a transformative effect on the utilities sector, and we need to help our members navigate the changes."

I still think so.

"Disruption" and "disruptive innovation" have become buzzwords in our industry over the past fifteen years. A paradigm shift with respect to the delivery of electric, water, and gas services in our communities is underway and it is inevitable. This is both because of—and despite—what people think they want. It will be both disruptive and revolutionary.

**It isn't the first time.** Similar disruptions have happened in the past. Whether you agreed with the railroads joining the coasts by dividing the prairies 160 years ago, or you thought the interstate highway system would connect the large towns

and destroy the small ones 60 years ago, those projects were going to happen because enough people wanted the changes and were willing to make them happen. Construction of both turned the world as it was known upside down, and—for both better and worse—things have not been the same since.

There is a big difference between the railroad and highway projects and the shift to carbon-neutral fuels though. In the cases of railroads and highways, communities that were near the planned construction were set up to "win," and the towns that were distant were set up to "lose." As we evolve toward a new energy future, the playing field is fairly level for all municipals, provided we respond in a proactive manner and build understanding in our towns.

#### We need to shift our thinking.

Rather than use the term "disruption," twenty years ago we might have said, "Someone moved our cheese." Ten years later we would have nodded sagely and agreed, "Our iceberg is melting." Whatever allegory appeals to you—with props to Spencer Johnson and John Kotter for giving us the cheese and iceberg stories—the fact that the world of hometown utilities is

going to be dramatically affected by changes in fuel sources, the effects extreme droughts, and weather events, is simply a fact of life.

We need to prepare our minds and our towns for the world that is being created at this very minute. It is good to recognize the past as an information kiosk, but it's not a roadmap. As an old boss of mine used to say, "You won't win the game by standing where they hit the ball last time, or where you want the ball to be hit this time. You have to move to where it is going."

#### We need to bring our communities along with us.

Every day, you get out of your bed and into your pickup. You head to downtown Metropolis, Minnesota, where you figure out how to deliver reliable, affordable, and sustainable utility services as the world changes around you. You and your team are hometown heroes.

Now, here's an important question. Are you sure that enough of your ratepayers understand all that you are doing for them? Do they know why having these services delivered by hometown people is usually the best approach? Forget that genetic, understated Midwestern humility for a minute. If the chips were down, would enough of your ratepayers grasp the value of the municipal model to preserve it?

A study conducted last summer on behalf of the Missouri Public Utilities Alliance, MMUA's sister organization in the Show-Me State, found that one in three municipal customers don't know their municipal is the property of the community. Yet 71% of them think it is best for the town if the utilities are owned by locals, not outsiders.

## From My Desk to Yours

**Karleen Kos**  
MMUA CEO



The 38% difference between what is desirable and what is understood represents both a sizable disconnect and a great opportunity to build understanding. If we can bridge the gap, your hometown utility will likely be allowed the room and resources that are needed to adjust to the new world. If we fail, it's more likely that the uncertainty of disruption will provide an opening for outsiders to take over some or all of your municipal service delivery system.

**MMUA is here to help.** You may remember the Association adopted a long-term plan earlier this year. That plan included goals aimed at strategic preservation of local control and assisting our members in communicating with their ratepayers about the benefits of the municipal model. While we have a lot of things scheduled over the next few years to move us all closer to achieving that vision, we are starting in 2023 with some basics from which we can build.

**MMUA**  
*Hometown services. Hometown strengths.  
Hometown solutions.*

- We have adopted a new tagline (pictured) which is intended to do two things:

(1) communicate to you, our members, the vision MMUA wishes to cast for municipal utilities in Minnesota, and (2) communicate to the world at large the unique contribution municipals provide in the life of our state. In the tagline, we use the word "hometown" because it is more easily understood—and tends to evoke more loyal emotions—than the term "municipal." Both MMUA and its members are all about providing hometown services, building on hometown strengths, and creating hometown solutions.

- We are planning a series of regional meetings throughout Minnesota during the first six months of 2023. We will invite utility leaders, elected and appointed officials, as well as community members to join us for frank conversations and uplifting stories about the challenges that lie ahead as we sail the seas of change. With this information we will be better able to lobby at the legislature on your behalf, work toward more sensible implementation and oversight at the agency level and leverage real life scenarios to help bridge the gap of understanding in the minds of ratepayers. Watch your email for invitations.

Disruption and uncertainty are not new. The Bible is full of stories about the "Somewhere-ites" overthrowing the "Elsewhere-ites." Rome ascended and fell. The bubonic plague killed off half the people on the planet. The world turned out to be neither flat nor at the center of the universe. In the grand scheme of things, the disruptive change we are experiencing as we shift to new fuels is not that big a deal.

What history tells us is that disruptive change is an opportunity. We must listen to our ratepayers and community opinion leaders, but we must also recognize they may have told Henry Ford they wanted a faster horse. Working with and through one another, we get to decide what future to build. And, as we declare a vision and deliver on it in our hometowns, we'll both preserve and transform the municipal model into something much better than a faster horse.

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# NERC 2022-2023 Winter Reliability Assessment warns of regional generation shortfalls

The North American Electric Reliability Corporation (NERC) released its Winter Reliability Assessment on November 17, which highlighted several regional problems that may be faced by system operators this winter.

Texas, the Southeast United States, and the southern part of the Midcontinent Independent System Operator (MISO) system are projected to see generator-forced outages if long-duration cold weather occurs. NERC said that higher electricity demand during these periods may make the problem worse.

In MISO, the large-scale retirement of baseload power is seen as the biggest threat to the system this winter. Weatherization issues and inadequate fuel supplies during extreme cold events are seen as additional threats. New England may also see the problem of inadequate fuel due to the region's dependence on liquefied natural gas (LNG) and oil-fired generation.

## ALLETE holds clean energy event in Duluth



On November 17, an energy event was held at the offices of ALLETE Clean Energy in downtown Duluth.

Among the topics of discussion were power grid maintenance, electricity reliability, and the development of clean energy use in Minnesota.

Minnesota Department of Commerce Commissioner Grace Arnold participated in the event. ALLETE Clean Energy is an independent power producer and supplier that controls Minnesota Power.

## Minnesota utilities comparatively low in workplace injuries

To meet these challenges head on, NERC advises:

- Maintaining adequate fuel supplies and train for energy emergencies.
- Preparing for winter conditions using NERC's report Cold Weather Preparations for Extreme Weather Events.
- Decisionmakers and leaders in the energy space keeping generation that is on the cusp of retirement operational through the winter and act as a mouthpiece for generators and gas companies during emergency weather and conservation alerts.

By taking these steps, the worst of a harsh winter can be avoided by keeping the lights on and gas supplies flowing.



**According to a new data analysis of Minnesota workplace injuries compiled from OSHA data, the rate of injuries in Minnesota's utilities sector is lower than most others where workers are engaged in similar types of tasks.**

In 2021, the Minnesota utilities industry had an injury incidence rate of 2.5 per 200,000 working hours, with 255 total injuries. This places utilities at #15 of 21 sectors. The only comparable industry to better this rate was construction at #17, with an injury incidence rate of 2.2 per 200,000 working hours and 2,076 injuries overall.

The most dangerous industry in Minnesota according to the data is mining, which experienced 9.5 injuries per 200,000 working hours. Today, mining employs relatively few workers, and the rate was calculated with a total of just 6 injuries. Transportation, healthcare, and retail trade were among other industries in the top 10. The safest industry in Minnesota is finance and insurance with a 0.2 injuries per 200,000 hours worked.

MMUA is proud of the role its safety and training programs play in helping to reduce injuries in the utilities sector in Minnesota.

## Western Lake Superior Sanitary District moves to repair wastewater equipment

The Western Lake Superior Sanitary District (WLSSD) which provides wastewater and solid waste services to Duluth and surrounding communities, recently authorized expenditures of up to \$3 million to repair distressed equipment at its wastewater plant.

The affected piece of equipment is a secondary clarifier, which separates solids from water. The rotating rake of the clarifier locked, and it became damaged after an attempted restart. The plant currently has four secondary clarifiers, so the system continues to operate.

WLSSD will fund the repairs with its emergency reserves and seek funding from the state in the upcoming legislative session.



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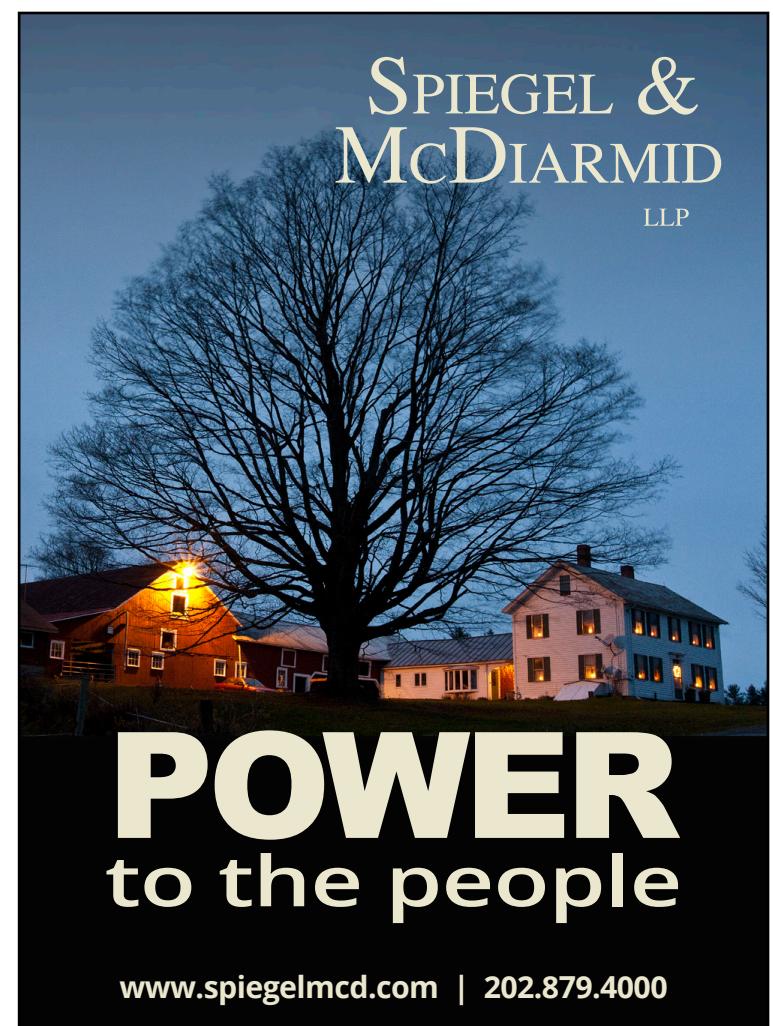
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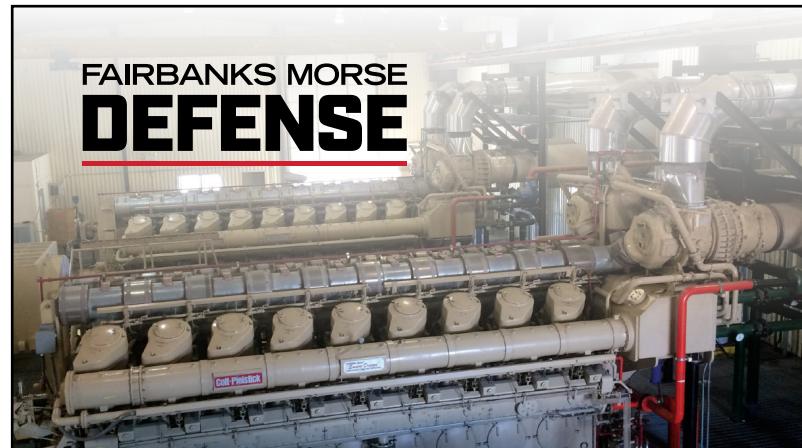
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# Moorhead Public Service defends “Tank of the Year” crown

Since 2006, Tnemec, a company that makes coatings for water towers, has sponsored the “Tank of the Year” contest that honors the most impressive coatings in the United States.

Towers are eligible if they are coated with Tnemec products, the project is not more than two years old, and the coating had not been previously submitted to the contest.

This year, Moorhead Public Service was defending their 2021 crown with a new coating and a brand-new submission. They competed with more than 350 tanks that had been nominated from across the country. The contest was decided through an online voting period where people from all over the US cast thousands of ballots to honor their favorite tank.

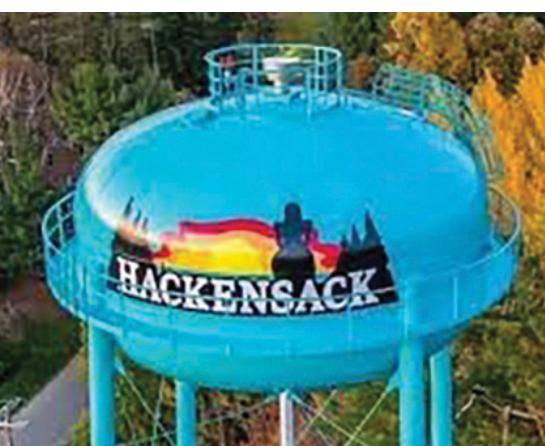
When the contest concluded,

Bossier City, Louisiana with its red, white, and blue tower honoring the military and first responders emerged victorious. Moorhead's new design placed 8th in the country. Hackensack, Minnesota placed 7th.

Given the rules, it is unlikely Moorhead will be competing in next year's contest, but they certainly had impressive results in the last two years. Congratulations!



Bossier City, Louisiana placed first in Tnemec's 2022 contest. Moorhead's 2022 submission placed 8th in the country.



Moorhead's 2021 submission won “Tank of the Year”.

Hackensack, Minnesota's water tower placed 7th in the country.

# Glick renomination as FERC chairman in doubt

Due to actions by Senate Energy and Natural Resources Committee chair Joe Manchin, (D-WV), the renomination of Federal Energy Regulatory Commission (FERC) Chairman Richard Glick may lead to the end of his term on December 31.

Manchin was “not comfortable holding a hearing,” presumably because of stances Glick has taken on pipelines, drilling, and coal.

If Glick is not renominated,

FERC will consist of four members, two Democrats and two Republicans, who will need a 3-1 vote (at least) to move policy decisions forward. The absence of a fifth vote may make the important work of FERC harder to do in the short run. Glick could be renominated in 2023. Alternatively, President Biden could propose a new nominee paired with a Republican nominee when Commissioner James Danly's term expires June 30, 2023.

# United Kingdom levies windfall taxes on oil and gas companies, electricity generation

On November 17, the British government announced a series of tax increases to oil and gas businesses as well as electricity generation firms in order to cap “extraordinary” profits being made by energy companies in the wake of the Russian invasion of Ukraine.

The tax increases will also help shore up troubled government finances in the United Kingdom (UK).

The tax on oil and gas companies will rise to 35% from its current rate of 25% and will

stay there until the end of March 2028. The total tax on the industry is now 75%.

A tax of 45% will be applied to power generation revenues the government says are “extraordinary,” which will be imposed on revenues from prices over £75 per megawatt hour (MWh).

The tax plan is estimated to raise £14 billion for the British Treasury in the 2023/2024 fiscal year.



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# Minnesota Municipal Utilities designated “Smart Energy Providers”

Austin Utilities, Detroit Lakes Public Utilities, and Rochester Public Utilities have been designated as “Smart Energy Providers” by the American Public Power Association (APPAs).

The Smart Energy Provider program recognizes each utilities’ commitment to energy program planning, efficiency, community programming, communications, and customer experience. The designation is kept for two years. Elk River Municipal Utilities and Moorhead Public Service earned the designation in 2021 and are therefore also among Minnesota’s Smart Energy Providers.



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# Minnesota Power moves aggressively towards renewables

Minnesota Power stated it will accelerate its path towards renewable energy, with feedback from community members and increased help from the Inflation Reduction Act being influential factors.

In a filing on November 7, Minnesota Power said that by 2030 it will seek to add up to 400 megawatts (MW) of wind energy and 300 MW of solar energy. The company also plans to add batteries that will be capable of storing between 100 and 500 megawatts of electricity by the earlier date of 2026.

In tandem with these plans was the further news that Minnesota Power will aim to close its two remaining coal-fired power plants by 2030 and 2035. Boswell Energy Center Unit 3 in Cohasset is slated for closure by December 31, 2029, and Unit 4 would close by 2035.

Minnesota Power also said that it would study the feasibility of closing Boswell 4 earlier than 2035, as well as the conversion of Boswell 3 to a synchronous condenser.



Minnesota Power's Integrated Resource Plan (IRP) was supported by the company, clean power organizations, the City of Cohasset, the Itasca Economic Development Corporation, and several unions including IBEW Local 31, LIUNA, Local 49 of the International Union of Operating Engineers, and the North Central States Regional Council of Carpenters.

The PUC voted on and approved the 15-year IRP on November 10.

## Analysts anticipate Democratic FCC majority

Financial analysis firm New Street Research, among others, predicts Democratic victories in the United States Senate in the 2022 election will ensure the nomination of President Biden's preferred nominee to the Federal Communications Commission (FCC) and a Democratic majority on the panel.

The effect of these appointments may be far-reaching, leading to the reinstatement of net neutrality guidelines and a more regulated mergers and acquisitions (M&A) environment for American telecommunications. Unlicensed spectrum constructs may also be favored over licensed spectrum.

Biden's current nominee, Gigi Sohn, is a lawyer who previously worked for several foundations and has had prior experience working for the FCC.

The analysts expect a Democratic majority on the panel by early 2023.

## New CO2 battery could speed progress of utility-scale storage

A new battery developed by the Italian company Energy Dome may help speed the transition to utility-scale battery storage.

According to the company, the carbon dioxide (CO2) battery costs less than half the price of lithium-ion batteries and can be made out of materials like carbon dioxide, steel, and water.

CO2 batteries charge by taking CO2 and pressurizing and compressing it. The heat that is generated is then stored. The CO2 becomes a liquid during this process.

When the battery needs to be discharged, the liquid CO2 is heated using the stored heat and the CO2 becomes a gas that can be used to power a turbine. The system is a closed loop which does not allow the CO2 to escape into the atmosphere.

The company says that CO2 is an excellent medium for this type of energy storage and transfer and that the system can be installed in many different physical environments.

## Environmental Protection Agency releases first ever agency-wide lead strategy

On October 27, the Environmental Protection Agency (EPA) released its first ever agency-wide strategy on mitigating and reducing the effects of lead in communities across the country.

The lead strategy will include goals such as reducing exposure to lead in home and child-occupied facilities, reducing exposure to lead in drinking water, reducing exposure to lead in soils, and identifying communities with high lead exposures and improving health outcomes.

Although the pervasiveness of lead in the built environment remains a daunting challenge, this lead strategy, combined with new funding from the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) should help mitigate the presence and impact of lead in water systems and other infrastructure.

## DOE announces grid grants for infrastructure improvements

On November 18, the Department of Energy (DOE) announced first-round applications had opened for grants under the Grid Resilience and Innovation Partnership Programs.

These programs have \$10.5 billion in available funding between 2022 and 2026. Also opening is \$2.5 billion in funding for the Transmission Facilitation Program. These monies became available through the Infrastructure Investment and Jobs Act.

These funds will go towards the repair and replacement of the nation's grid as well as for the construction of new transmission. Concept papers for the competitive portions of Grid Resilience Grants and the Smart Grid Grants were due on December 16. Concept papers for the competitive portion of the Grid Innovation Program are due January 13, 2023. Additional funds for these projects are likely to become available through the state of Minnesota's formula funding allocation.

MMUA offered a free webinar to help members prepare for writing a concept paper on December 7. If you would like more information, please contact Kent Sulem or Bill Black.

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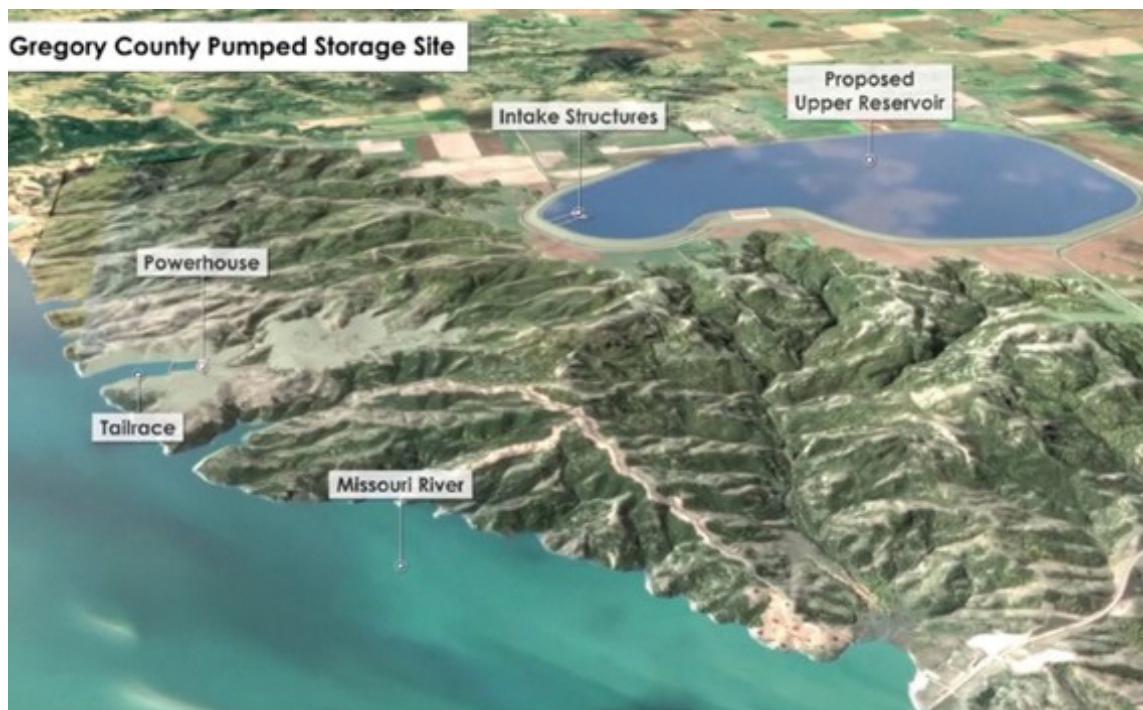
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## Gregory County

Continued from page 1



This illustration shows the site of the planned Gregory County Pumped Storage project, including the new upper reservoir.  
Courtesy of MRES and MidAmerican Energy.

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Gregory County Pumped Storage is a partnership between Missouri River Energy Services (MRES) and MidAmerican Energy Company. The Western Minnesota Municipal Power Agency (WMMPA) which finances the construction and acquisition of the generation and transmission facilities for members of MRES has submitted a notice of intent to file license application with the Federal Energy Regulatory Commission (FERC).

## Thief River Falls

Continued from page 1

and rain and flooding over the next two weeks took the river in the opposite direction. According to estimates, Thief River Falls surpassed the flood of 1950 in the amount of water they passed in 2022.

Flooding brought bank cuts, logjams, and damage to a handicap fishing pier that was tipped 10-14 degrees out of compliance. For 4 ½ days, crews worked continuously cutting debris away from the face of the dam. Boat docks, canoes, kayaks, and small boats were among the items found during the process. The river at that point was running some 15000 CFS.

When water is going over the dam at this rate, it actually draws water away from the turbines. If the tailrace (the water channel below the dam) is high, the turbines don't produce as well. For that reason, the City shut the turbines down for about two weeks during this ice-out period.

In July of this year, the Biden administration declared a federal disaster in several counties in northwestern Minnesota that had been affected by the flooding. On November 1, a team from the Federal Emergency Management Agency (FEMA) toured damage from the flooding, including repairs that had

already been made to the fishing pier at the dam. On November 3, another group toured three sites at the dam. Thief River Falls is currently waiting for funding assistance from FEMA to offset some of the costs of the repairs.

Beyond unparalleled floods and droughts, the Thief River municipal dam and power plant is an extremely reliable source of power for the community. The two turbines are rated at 250 kilowatts (kW) and 375 kW, respectively. The 250 has been working continuously since 1927 with only minor rewiring taking place in 1991 or 1992. The 375 received a full rebuild in 2019 due to failure of the windings. The entire unit was refurbished at that time. Going forward, the plan is for the 250 to be completely refurbished within the next 3-5 years.

The 2019 rebuild, as well as replacement of a cable on the other turbine which gave the power plant an extra 35 kilowatts (kW), raised total power generation up to .625 megawatts (MW).

Through all the highs and lows, Thief River's municipal dam has been a reliable source of power for the city for almost 100 years. With the care it receives, it is likely to go on providing power for the foreseeable future.



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## European Space Agency creates plans to collect solar energy in space

Could the world soon see solar energy collected directly from space?

The European Space Agency (ESA) is actively exploring just that with its “preparatory program” called SOLARIS.

SOLARIS was presented at the ESA Council at Ministerial Level in November 2022. Its goal is to engage in limited investment in space solar so that a full development program can be undertaken in 2025 if the project is feasible.

Space-based solar would work by collecting solar energy in orbit via a satellite several miles long. It would hold a solar array that

would collect solar energy perpetually and then relay it back to earth through high-frequency radio waves. A rectenna (rectifying antenna) would then pick up the radio waves and convert the energy into electricity.

There are still several parts of the plan that will be examined through SOLARIS, such as ensuring the safety of high-frequency radio waves to ground stations, assembling such a large satellite in space with today's robotic technology, and the carbon footprint of the activity itself.

If these issues can be conclusively dealt with, the opportunities are vast. Each satellite that is put into orbit could create the same

amount of power as a nuclear power plant.

Other organizations are seeing the promise of solar generation in space. Caltech's Space-based Solar Power Project (SSPP) is exploring many of the same goals as the ESA. They are working on the solar panel building blocks of the idea by making them efficient, small, and light. They plan a test launch of their prototypes into space in December.

Space-based solar energy is an exciting area of energy research that with more research and investigation could be a key component of the world's future energy infrastructure.

## White House hosts second international ransomware summit

On October 31 and November 1, the White House hosted the second International Counter Ransomware Summit.

The gathering brought together countries from around the world to discuss how to address cyber-attacks and prevent them.

Some 36 countries attended the summit, as well as companies such as Microsoft, SAP, and Siemens. United States government officials that participated included FBI Director Christopher Wray and National Security Adviser Jake Sullivan.

Themes addressed at the summit included items like



improving cyber resilience and disrupting ransomware actors when they are still in the planning stages of an attack.

## Failed ransomware attack temporarily shuts down Minnesota ISP



It was a case of some good news and some bad news for Minnesota internet service provider Arvig on October 25.

The good news: the company was able to foil a ransomware plot. The bad news: the hackers shut down broadband and voice

service in retaliation.

According to a Facebook post from the company, “On Tuesday, October 25, Arvig experienced a cybersecurity incident at approximately 6:45 AM. An attempted ransomware attack was unsuccessful. While it failed, the attackers were still able to cause a service interruption. The attack failed due to the extra layers of protection implemented by Arvig's cybersecurity team... This incident is being investigated thoroughly and a forensic analysis is being conducted to validate that the threat was mitigated.”

Arvig's voice and internet services were down for about 3 ½ hours until they were restored. About 60,000 statewide accounts were affected. Arvig is based in Perham, Minnesota.



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## Poland builds first nuclear power plant

On October 28, Polish Prime Minister Mateusz Morawiecki said that the country had chosen the American company Westinghouse to provide the technology for the country's first-ever nuclear power plant, which will be located on Poland's Baltic Sea.

Westinghouse, of Cranberry Township, Pennsylvania, will provide three reactors to the new plant. Poland, which is also planning for a second plant with three reactors, is trying to address its carbon output as well as the loss of gas supplies from Russia.

The plant is expected to be operational by 2033.



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## Direct potable reuse is adopted in Colorado



**Direct potable reuse (DPR), which is the process of directly reusing treated water without first diluting it in water bodies, has been adopted in Colorado, a first in the nation.**

In mid-October, Colorado's water quality agency gave unanimous preliminary approval to the plan, which was then voted on in November, leading to its adoption.

Drought in the Western United States and the drying up of rivers and lakes across the region have led Colorado to view DPR as a possible solution to their water woes.

Proponents of DPR argue that it will make more water available and that river waters are often treated several times by upstream users.

DPR itself uses complicated filtering and treatment to achieve the level of water quality that renders it safe for immediate reuse.

While the process is still novel and controversial, several states in the west and southwest are looking at DPR as a practical solution to their water woes. Growing populations and drought-impacted bodies of water are already causing problems that do not appear likely to improve anytime soon.

## FERC projects higher than usual natural gas prices this winter

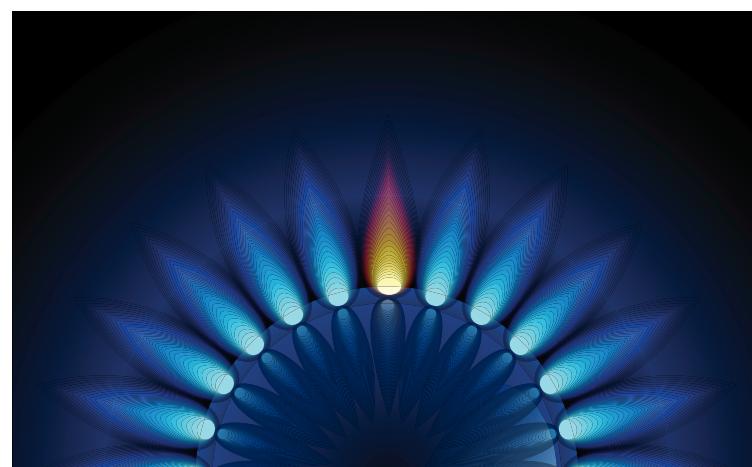
**According to the Federal Energy Regulatory Commission's (FERC) Winter Energy Market and Reliability Report, natural gas prices are expected to be higher than average this winter, with natural gas exports playing a role in pricing.**

Pricing at the Henry Hub showed gas for the balance of winter trading at \$6.82/million British Thermal Units (MMBtu), up 30% from last winter's settled price. Both production and demand are expected to slightly increase this winter, but exports of liquefied natural gas (LNG) will cause supply to shrink.

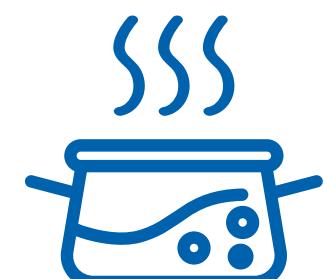
Supplies of natural gas are being exported to Mexico via pipeline and also worldwide to help with gas supply losses in Europe as a result of the Ukrainian conflict.

Due to the many factors at play and evidence of natural gas price manipulation in the past, FERC will be closely watching market manipulation this year so that all market participants are on a level playing field.

FERC Chairman Richard Glick said, "Although FERC does not regulate natural gas prices, we do have authority to address market manipulation and we intend to remain particularly watchful."



**Mounds View issues precautionary boil water advisory**



**The Twin Cities suburb of Mounds View issued a precautionary boil water advisory on the morning of October 31 after it was found that a computer software problem had caused a drop of pressure in the city's water mains.**

The city relayed to residents that a drop in water pressure means contamination may have entered the water system and that it could sicken city water users.

The advisory was in place until 7 AM on November 1, at which time the city rescinded the boil water advisory. At that time, the software issue had been resolved and all water samples submitted to the lab were free of illness-causing bacteria.

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# Bloomberg report identifies electric vehicle trends in new factbook

In a new report released in time for the United Nations Climate Change Conference (COP27), strategic research provider BloombergNEF released a report entitled the Zero-Emission Vehicles Factbook.

This report details in a highly granular way the progress made toward electric vehicle (EV) adoption, as well as the impediments that stand in its way.

Before getting to EVs specifically, the report examined the particulars of the worldwide automobile fleet as it currently stands. The global automotive fleet of four-wheeled vehicles is currently estimated at 1.54 billion vehicles, with growth slowing the United States, China, and Europe, while growing faster in the developing world. Still, China comprised 33% of the 96 million new cars that were added in 2022.

Along with the rise in cars is a continued rise in automobile emissions. Estimated 2022 road transport emissions reached 6.3 gigatons of carbon dioxide (GtCO<sub>2</sub>), which is 3% higher than during 2021 as the world emerged from the Coronavirus (COVID) pandemic. The 2022 emissions were 1% higher than in 2019.

North America was the worst offender in road transport emissions, with 1.64 GtCO<sub>2</sub> in 2022. Europe and China had the next highest emissions, with Europe emitting .96 GtCO<sub>2</sub> and China emitting .85 GtCO<sub>2</sub>.

EV sales are increasing rapidly worldwide, growing by 110% to 6.6 million in 2021. In just the first half of 2022, more than 4.3 million EVs were sold. The biggest customers for EVs currently are the Europeans and Chinese, with Europeans buying 36% of EVs and the Chinese buying 48% of EVs in 2021. In 2022, EV sales are expected to reach 10.6 million, which is 63% higher than in 2021, and 242% higher than in 2020.

In the larger passenger vehicle market, EVs are now 13% of the total global market, up from 8.7% in 2021. EVs have the largest market share in China and Europe, where 23% of Chinese cars and 22% of European cars sold were electric in the first half of 2022. This pales in comparison to places like North America and Japan, where electric vehicle sales make up 7% and 2% of the total, respectively.

The forecast for EV sales is growing ever more optimistic as the actual results continue to outstrip expectations. BloombergNEF's current estimate that is EVs will comprise 17% of global passenger vehicle sales by 2030. However, with strong market penetration visible in Europe and China, and less so

in the United States, Japan, and developing countries, the EV "stragglers" have room to grow. Even with low adoption in parts of the developed world, it is even lower in developing countries, where adoption made up about 1% of total passenger vehicle sales in 2022.

The report noted that without global action or policy changes in individual countries, EV and internal-combustion engine (ICE) stratification will occur, with many developed countries seeing enormous EV sales by 2035. Meanwhile, the majority of ICE sales will continue to occur in markets that currently have low EV adoption rates, at least in the near term.

Sales of EVs that are commercial vehicles are also growing in number. More than 2.5% of commercial vehicles sold worldwide in the first half of 2022 were EVs. Smaller to medium-size electric vans are popular, as well as larger trucks in places like China.

In the world of buses, China continues to lead the world in EVs, with an astonishing 97% of global electric buses. China had just over 700,000 EV buses in its fleet in 2022, while Europe had 10,700 and the United States had a mere 2,000 in comparison.

The use of oil and global emissions have already been affected in a positive way by the gradual move to EVs. The use of EVs avoided the use of 1.7 million barrels of oil per day in 2022, which is an increase from 1.5 million barrels per day in 2021. By 2030, this is expected to rise to 7 million barrels of avoided oil per day. In the emissions area, the end of 2022 will see EVs keeping 152 metric tons of carbon dioxide (MTCO<sub>2</sub>) out of the atmosphere.

It is clear both from experience and from the report that the auto industry is fully wedded to EVs, and at this point is not going to turn back to focusing on ICE car development. Automobile manufacturer revenues from EVs and fuel-cell vehicles (FCVs) increased to \$223 billion in 2021 from \$111 billion in 2020.

## Market Drivers

How are governments bringing about the transition to electric vehicles? The report described the process as a continuum that starts with consumer and manufacturing subsidies and tax credits, and then gradually moves to the end stage of fuel economy/emissions regulations that eventually lead to the phasing out of ICE vehicles. Countries around the world have used a variety of these tools at various times to bring about the desired result of more EVs and fewer emissions.

China has engaged in EV subsidies since 2010 but plans to conclude them by the end of 2022. Europe's EV subsidies vary, with the European Parliament banning ICE car sales by 2035.

The United States has engaged in EV subsidies for over a decade and has strengthened that effort with the passage of the Inflation Reduction Act (IRA). The IRA implemented tax credits for new cars, used cars, and commercial vehicles. As a direct result of the IRA, the report estimated that the United States' EV fleet would be 20% larger in 2030 than it would have been without it.

Another key market driver is the technological growth of EVs in the past few years. Charging power has increased rapidly from 50-100 kilowatts (kW) up to 195-350 kW. Average driving range with a battery charge has also increased greatly, with range growing 14% every year since 2019. EVs in Europe now have an average range of 292 miles, with the United States clocking in with an average 267-mile range.

An important market driver on the EV production side has been the rapidly increasing production of EV batteries, and their related drop in cost. In 2022, there was 806 gigawatt-hour/year (GWh/year) of lithium-ion battery manufacturing worldwide. By 2025, this is estimated to reach 4,151 GWh/year, with China continuing to lead the market. As a result of this ramp up, the drop in the cost of lithium-ion batteries has been large. Lithium-ion batteries have dropped from \$1220/kWh in 2010 to \$132/kWh in 2021.

However, the report noted that material price spikes may cause this downward trend to pause or perhaps reverse. Lithium-ion battery prices rose for the first time ever in 2021. Much of this has been caused by raw material price increases, many caused by the war in Ukraine.

## Corporate Commitments

As noted previously, global automakers have made a move toward EVs that is extremely unlikely to reverse. This is illustrated by their research and development (R&D) funding and capital expenditures (capex). In the first half of the 2020s, Ford will spend 72% of its R&D and capex on EVs and digital tech, Volkswagen 49%, and General Motors (GM) 42%.

Another dramatic move by automakers is their announcement that they will completely phase out their production of ICE vehicles. Audi, Fiat, Mercedes-Benz, and Volvo will phase out their sale of ICE

vehicles by 2030, with GM reaching that point in 2035.

## Government Commitments

Moving beyond subsidies, governments around the world are also setting their own benchmarks for the phaseout of ICE vehicles, a move that has certainly played a role in the corporate commitments to the EV transition. Some 38 countries have committed to the complete phaseout of ICE vehicles. These include Canada, Costa Rica, Singapore, Greece, and Vietnam. Together, these nations make up 19% of the world passenger vehicle market.

The United States and China have not made these kinds of commitments but have instead set substantial EV targets. The United States set a target for 2030 that 50% of passenger vehicle sales will be electric in

that year. Meanwhile, China has called for a 40% target that included fuel-cell vehicles (FCV) by 2030.

In the United States, the direct phaseout of ICE has been led by individual states instead of Washington. California and New York will phase out the sale of new ICE vehicles in 2035. One-third of U.S. states have also adopted California's low-emission vehicle and greenhouse gas (GHG) emissions regulations, which will further encourage the adoption of EVs.

The progress towards EVs has moved in fits and starts, but it is now clear that EVs are here to stay and will eventually become the largest part of our transportation ecosystem. Concrete data like the information contained in this report goes a long way towards illustrating how dominant this trend really is.

## Hibbing celebrates 100 years

Hibbing Public Utilities celebrated the 100th anniversary of the Hibbing Municipal Power Plant, now called the Hibbing Renewable Energy Center, on November 10th.

The event featured speeches and tours, while the Hibbing City Band provided music. Congratulations!



Representative Julie Sandstede (DFL-Hibbing), spoke at the event.



General Manager Luke Peterson led tours of the Hibbing power plant.

# New study details steps to gas system resiliency

A new study from the American Gas Foundation (AGF) discussed the ways in which natural gas systems can reach resiliency.

According to the report, resiliency is described as “the characteristic by which the natural gas delivery system is able to prevent, withstand, adapt to and quickly recover from damage or disruption.”

The AGF states that as the gas system becomes an ever-larger part of the United States’ baseload energy infrastructure, the importance of gas system resiliency to the larger system also grows. However, there are many barriers to resiliency that have to be addressed.

Among current identified issues are:

- Inadequate political and regulatory support for resilience in the gas system.
- Few regulatory initiatives specifically addressing gas system resilience at the state level.
- Resilience being embedded within reliability and safety

standards, and

- Lack of regulatory mechanisms to compensate participants for resilience investments.

To address these issues, the first step put forward is to “value resilience.” As the above identified issues make clear, resilience on its own is not adequately addressed or valued at this time. On the governmental side, the report puts forward several recommendations that will drive resilience by illustrating the importance of the gas system:

- State Commissions should implement analyses to understand the total value of gas infrastructure to the entire energy system.
- Safety and integration into renewable energy infrastructure should be highlighted when discussing gas systems with regulators and decision-makers.
- The importance of gas in the transition to renewables and its staying power should be

emphasized in order to win regulatory and financial support that will increase resiliency, among other things.

When resilience is valued and understood in the gas space, investments can be funded and made that will substantively raise resiliency as well as safety and overall efficiency. AGF divided their resiliency investments as either “downstream of the city gate” or “upstream of the city gate.” Gates or city gates are the points at which gas is delivered from transmission lines to the local gas utility. At this facility, gas is metered and pressure is regulated.

Recommendations for “downstream of the city gate” improvements included:

- Increasing weatherization investments for pipelines and distribution.
- Continue the improvement of downstream city gate/pipeline interconnections.
- Further develop gas system storage facilities.

- Expand integration of alternative fuels like hydrogen.

- Modernize infrastructure to lower emissions, safety, and reliability.

Proposed recommendations for “upstream of the city gate” improvements included:

- Increasing investments in well-head, gathering, and processing systems, gas transmission networks, and storage facility weatherization so the system is ready for extreme weather.
- Modernize pipelines and interconnections.
- Design/redesign systems to allow for the use of low-carbon fuels, which will provide for increased resilience and reduction of carbon emissions.

When resilience is fully valued and these investments made, the report highlighted a number of benefits that would occur as a result:

- Increased customer, investor, and stakeholder reliability.

- New infrastructure/infrastucture investments leading to positive outcomes like fewer energy disruptions, less customer problems, and lower insurance rates.

- Lower costs to society when a resilient gas system rides out the storm and doesn’t impact daily life, like business or school.

- Benefits like more flexibility, easier conversion to green natural gas or hydrogen blends, safer storage, and an increased ability to react in emergencies.

Like many things in the world of energy, resiliency and reliability are sometimes taken for granted by the public. By sharing the story of our systems, it will help resiliency grow by increasing public understanding and investments.

## Florida mutual aid debrief examines MMUA deployment after Hurricane Ian

On November 3, participants from MMUA, MREA, and member utilities held a debrief about the MMUA deployment to Florida that occurred from September 28 to October 7.

Forty lineworkers, 25 pieces of equipment, and 14 utilities were dispatched to Bartow, Florida to help in the aftermath of Hurricane Ian. The MMUA team included Mike Willets, Theresa Neddermeyer, and Joe Schmidt. The onsite leaders for MMUA were James Monroe and Cody Raveling. The goal of the debriefing was to learn what went well, what could be improved, and what lessons could be learned for deployments in the future.

### Deployment, staging, and travel logistics:

The group discussed the staging of the deployment, which occurred in Rochester, Minnesota on September 28. One concern that was raised was that the crews coming from further distances to the muster point, had already clocked several hours for the day before the large group departed en masse. This raised questions about the allowable hours for driving in a single day. The consensus was that this

procedure should be workable as long as the distant utility has two drivers.

One thing that could be an issue is delay of departure, where a single utility is unable to deploy on time due to traffic or mechanical issues, thus holding up the whole group that is waiting for them before departing together. To address this issue, the participants suggested a helpful “plan b” might be having a first contingent deploy on time and proceeding to the first fuel stop. This would reduce refueling congestion and save time, helping get the group as a whole back on schedule.

For travel logistics, onsite leader Cody Raveling said that all planners should “uncheck” the Google Maps feature for fuel-efficient routes. This can lead a convoy of trucks onto a route that is mountainous and of concern for braking.

Another part of travel planning that was discussed was fuel stops. The team estimates 180-200 miles is a healthy number of miles for the convoy to target for each leg of the trip; they didn’t have any major issues when sticking around that mark. The team tried stretching fuel stops to 240 miles, but the distance was too far for a few vehicles.

The group had good luck finding hotels, which helped the logistics of the trip immensely.

### Crew communications

Radios that were provided for the trip were extremely helpful when working on the ground in Bartow. On the way down, at least one person on each crew was hooked into a group text which kept everyone connected on the way down and back. For small crews, it was mentioned that a standalone GPS unit might come in handy so that a one or two-man crew is not looking at their phones on the way down. On the convoy down and back, crews had complete addresses of the fuel stops and even a picture of what it looked like which helped people get to the right place.

### MMUA onsite leadership and safety

Once MMUA crews hit the ground, local “bird dogs” pointed them towards where the problems were. Cody split the Minnesota crew into four groups, who would then text their location to the leaders so they could be resupplied when needed. James, the other onsite leader, had the crews share their locations with their phones, which was



of great help to everyone. Communications generally went well, and the redundancy between cell phones and radios was particularly useful when reliability faltered.

### Safety and work practices

Attention to safety onsite was good. Cody saw job briefings being done, and the appropriate clothing was worn by crews. Hot work was done towards the end of the deployment, and that was done correctly as well. The group said at a debrief down there, “What do you do if you’re not sure if something is dead?” “Test and ground.”

### Wrap up

MMUA CEO Karleen Kos thanked everyone for participating in the deployment and helping to save lives in Florida by bring-

ing lights and air conditioners back on.

MMUA Director of Training and Safety Mike Willets encouraged everyone to come to the Emergency Preparedness Workshop in January to learn more and assist in the development of the mechanic checklist and the “bird dog” toolkit, among others.

Once again, Minnesota’s team made a positive impression nationally. Cody Raveling said, “I heard one of the local line guys saying that the MMUA crew was really kicking it. I was proud of that.”

Mike Willets concluded the meeting by saying, “There were roughly 150 lineworkers there, we were the last to leave. [If they had their way in Florida] You’d probably still be working down there!”

# MMUA sets Drug and Alcohol Testing Consortium rates for 2023

By Joe Schmidt

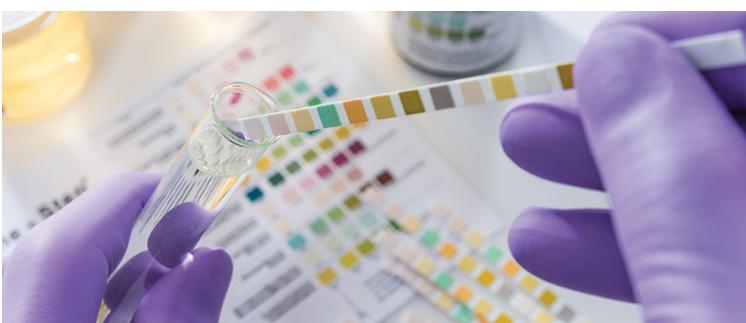
The Drug and Alcohol Testing Consortium is an important service that MMUA has offered to members for several years.

The Consortium offers random and planned drug and alcohol testing to members for a variety of business and safety management scenarios.

MMUA has set the rates for the Consortium for 2023. The program year commences on January 1.

**1. Initial Fee**—Each participating employer or independently participating contractor is assessed an initial fee of fifty dollars (\$50). Contractors whose employees participate as part of a member's substance abuse prevention program are not assessed the annual fee. Contractors who join the Consortium as an independent entity are assessed the annual fee.

**2. Random Drug Testing Fee**—A random drug testing fee of \$35 per program year is assessed for each covered employee subject to random drug testing.



The Random Drug Testing Fee is assessed for subsequent years of employment.

#### 3. Additional Drug Testing Fee

A fee of \$41.25 is assessed for each pre-employment, post-accident, reasonable suspicion, return to duty or follow-up drug test.

#### 4. Alcohol Testing

The Consortium's selected vendor will give notice of random alcohol testing in conjunction with random drug testing. Consortium members must communicate back to the Consortium Third Party Administrator all alcohol test results.

**Not included** in this fee schedule

are the services performed by local sites, which collect the urine specimen for drug testing, complete the required chain of custody form, and forward the specimen to the lab in a post-paid overnight package. Nor does the fee schedule include local services conducted by the employer, at a collection site, or by a cooperating law enforcement agency. Collection and breath testing fees are set by each collection agency and are separately billed by the collection agency to the participating member or contractor. Additional charges may also apply for extra copies of printed materials and for workshop registration.

If you have any questions, please reach out to Joe Schmidt at [jschmidt@mmua.org](mailto:jschmidt@mmua.org).

# Walz executive order directs state agencies to seek federal funding for clean hydrogen

An executive order (EO) signed by Governor Tim Walz on October 25 directed several state agencies to seek clean hydrogen funding for the development of the industry in the state.

Walz said, "Through this Executive Order, Minnesota will be ready to meet the changing needs of the energy, transportation, and agriculture industries, while continuing to create new jobs and grow our economy."

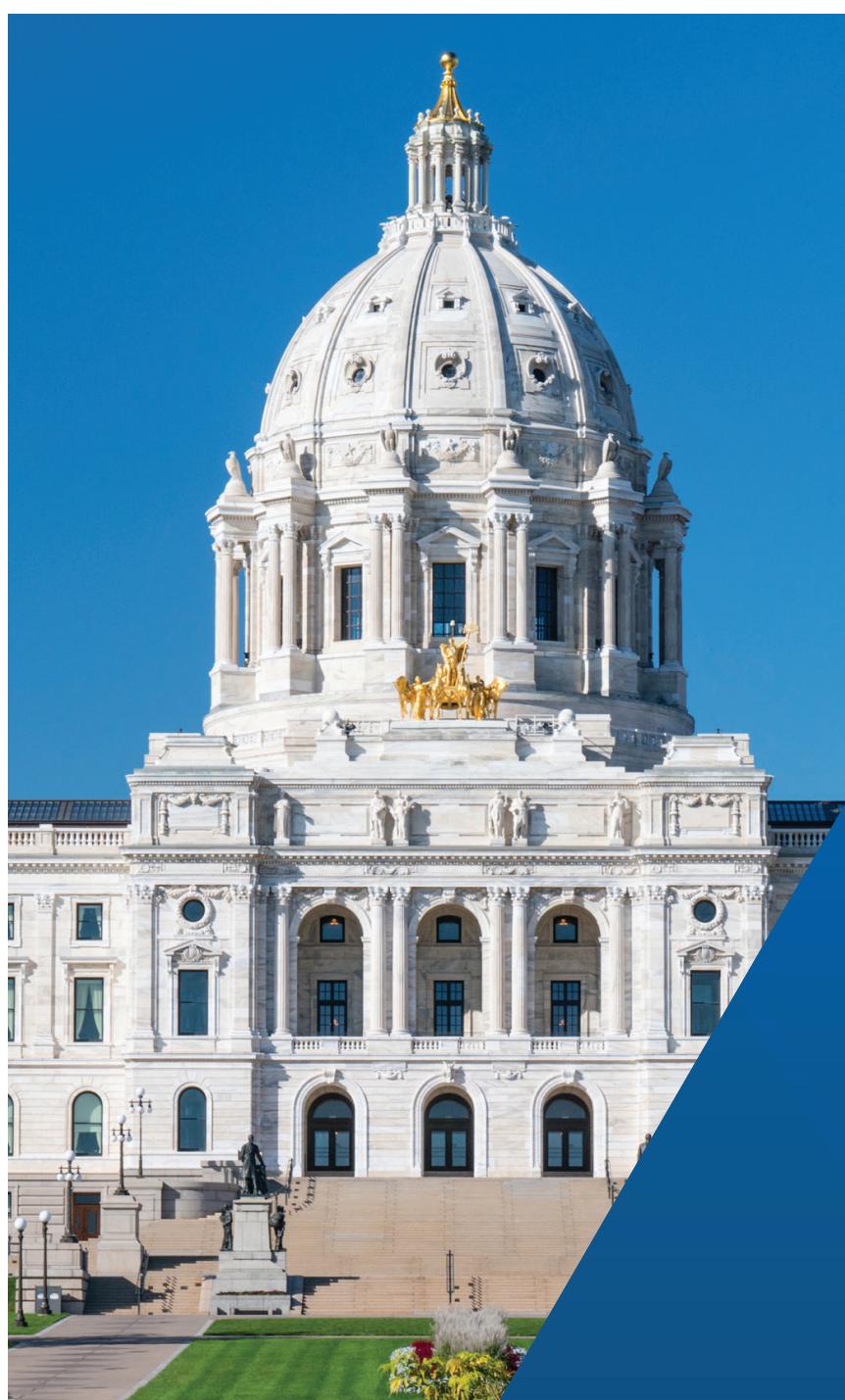


Affected state agencies included Agriculture, Commerce, Employment and Economic Development, Natural Resources, Pollution Control Agency, as well as the Public Utilities Commission.

According to the EO, the Department of Commerce will conduct a regulatory evaluation of the state's readiness for a hydrogen industry in concert with the state agencies as well as others. The agencies will also work with Tribal Nations to understand their interests in hydrogen production.

The state agencies have also been directed to work with the state's utilities and institutions of higher learning to explore funding opportunities as well as other important factors for the industry including environmental justice, workforce development, and data sharing.

In a statement, Governor



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# EIA report estimates 25% of United States coal generation to close by 2029

The United States Energy Information Administration (EIA) on November 7 said that according to their "Preliminary Monthly Electric Generator Inventory" around 23% of the country's 200,568 megawatts (MW) of generation is planned to retire by the end of 2029.

The coal capacity planned for retirement is located in 24 states. The largest amount of

retirement is expected in 2028, when 9,842 MW are slated to go offline.

The EIA noted that many of the planned retirements are of older coal generation facilities, which are less efficient and therefore less competitive in today's energy marketplace. The last large coal-fired power plant to come online was the 932 MW Sandy Creek Energy Station in Texas in 2013.

## Cooperative Energy Futures plans solar garden for site near Clara City

Cooperative Energy Futures (CEF), a community energy cooperative with solar arrays in urban and rural locations across Minnesota, is now proposing a 1.4-megawatt (MW) solar garden near Clara City, Minnesota.

Customers of the new solar garden must live in Chippewa, Lac qui Parle, Kandiyohi, Renville, or Yellow Medicine counties and be Xcel Energy customers.

By becoming a member of the cooperative for \$25 and

subscribing to the solar garden, ratepayers will see savings in electricity costs. According to CEF, this is because the electricity bill (paid to CEF) and the credit (received from Xcel Energy) create net savings for ratepayers. Xcel pays a credit because it is required to buy the electricity from community solar gardens in Minnesota.

The \$1 million project will proceed when enough subscribers are signed up to meet its cost needs; its anticipated operation date is early 2024.

## MPCA uses new technologies to treat PFAS contamination in Minnesota

Thanks in part to funds from the 3M PFAS settlement, the Minnesota Pollution Control Agency (MPCA) announced on October 31 the purchase of a new technology system that can destroy per- and polyfluoroalkyl substances (PFAS) in the environment on a large scale.

Fewer than 20 systems of this type exist in the world.

The system will be put into action in the east metro, where significant PFAS contamination by the 3M Co. occurred over several decades.

According to MPCA, the water treatment process consists of two parts. The first is called surface activated foam fractionation (SAFF) and uses a process that injects air into PFAS-contaminated water. When this occurs, the PFAS turns into a foam which

can then be separated from the water.

The second part of the process acts on the PFAS foam. It goes to a DEFLUORO unit where the foam's carbon-fluorine bonds are broken through electrochemical oxidation.

Each part of the process will be sited in a different location. The SAFF system will initially be staged at Tablyn Park in Lake Elmo. The DEFLUORO system will be located at the former Washington County landfill site.

Through these technologies and other emerging ones, progress on PFAS continues to be made, as we learn even more about eradicating these persistent "forever chemicals."

## Xcel plans for accelerated 2030 retirement of company's coal generation

Xcel Energy announced on October 31 that by moving up the closure of Texas' coal burning Tolk Generating Station, as well as coal plants in other states, the company will completely end the use of coal by 2030.

Xcel planned to work with New Mexico regulators in November 2022 to retire Tolk

Generating Station by 2028. The plan will then go to Texas regulators in February of 2023. The plant was originally set for closure in 2032-304.

Now that Tolk Station's anticipated closure date has been moved up, Comanche 3 Power Station in Colorado will be the last coal-burning power plant in Xcel's portfolio.

Comanche 3 was already set to close in late 2030.

Xcel estimates the early closure of Tolk Station will save their customers in Texas and New Mexico about \$70 million. Tolk Generating Station is located 70 miles northwest of Lubbock, Texas and consists of two coal-fired units that produce 1,067 megawatts (MW).

## United States and United Arab Emirates partner on clean energy projects

An estimated \$100 million in clean energy investments are coming to the United States and the United Arab Emirates (UAE) through a new partnership between the two countries, the White House said on November 1.

The two countries have formed the Partnership for Accelerating

Clean Energy (PACE) which will implement and track these investments.

The ultimate goal of the partnership will be to put in place 100 gigawatts (GW) of clean energy by 2035.

Among the partnership's areas of focus are investing in clean energy in emerging

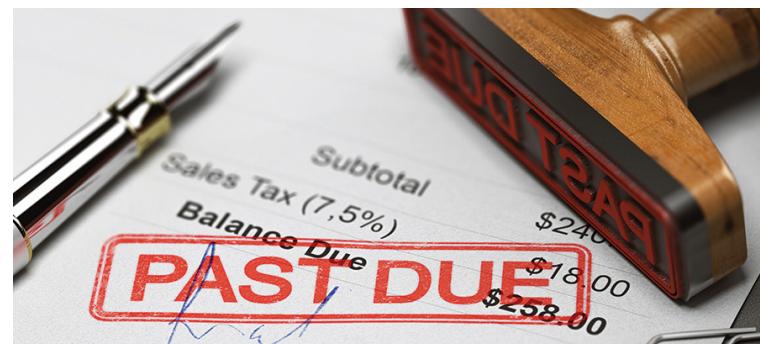
economies, spurring clean energy innovation, deployment, and supply chains, reducing carbon dioxide and methane emissions, promoting clean nuclear energy as a clean energy solution, and tackling industrial and transportation decarbonization.

## American families owe more than \$16 billion in late utility bills

According to information from the National Energy Assistance Directors Association (NEADA) more than one in six American families is struggling with their energy bills.

As of August 2022, the total amount owed is more than \$16 billion. The average individual amount owed is \$788.

NEADA noted that energy prices have risen sharply, particularly affecting those with the least. From 2020 to 2022, average family energy costs have increased by 22%. Without



the help of federal funds surrounding the COVID pandemic, the dollar amount of late utility bills would be even higher.

NEADA represents the state directors of the Low Income Home Energy Assistance Program (LIHEAP).

## Equity ratio complaint supported by Iowa Utilities Board and Minnesota Department of Commerce defeated in FERC ruling

On November 2, the Federal Energy Regulatory Commission (FERC) turned away a complaint from the Iowa Coalition for Affordable Transmission brought against ITC Midwest.

ITC Midwest is a subsidiary of ITC Holdings, the largest independent transmission company in the country.

The complaint concerned ITC Midwest's equity ratio, which had been set at 60% after ITC Midwest bought Interstate Power and Light's transmission infrastructure in 2007. The Iowa

Coalition for Affordable Transmission, supported by the Iowa Utilities Board and Minnesota Department of Commerce, said in the complaint this ratio should be lowered to 53% and that ITC Midwest should not be able to use their actual capital structure to set the ratio.

However, the Iowa Coalition and their backers failed to convince FERC of this, because FERC said that ITC Midwest still meets the conditions of the three-prong test that allows them to use their capital structure to set the higher equity ratio.

The three prongs were met because FERC said that ITC Midwest still issues its own debt without guarantees, has its own bond rating, and has a capital structure within the range of capital structures approved by the Commission.

According to FERC, the Iowa Coalition was unable to meet any of these points to their satisfaction. This ruling may result in higher transmission costs in the region.

## November 2022 elections

Continued from page 1

She will be joined in leadership by Rep. Jamie Long (Minneapolis) as House Majority Leader, and Rep. Lisa Demuth (Cold Spring) as Minority leader, the first person of color to hold the position.

Because Democrats already held the majority, many House committees saw their chairpersons rolled over from the 2022 session, but retirements and election losses meant other committees needed new chairpersons.

Appointments of particular interest to MMUA include Rep. Liz Olson (Duluth) to the Ways and Means Committee; Rep. Aisha Gomez (Minneapolis) to the Tax Committee; Rep. Fue Lee (Minneapolis) to the Capital Investment Committee; Rep. Ginny Klevorn (Plymouth) to the State and Local Government Finance and Policy Committee; and Rep. Patty Acomb (Minnetonka) to the Climate and Energy Finance and Policy Committee (she was vice-chair in 2022).

The House has also created a Sustainable Infrastructure Policy Committee to be chaired by Rep. Erin Koegel (Spring Lake Park), but to date no details have been provided as to the issues for which this committee will be responsible. With no Senate counterpart, it is not clear how bills generated by this group will get aligned.

House Republicans also announced their minority leads, including Rep. Pat Garofalo (Farmington) for Ways and Means; Rep. Greg Davids (Preston) for Taxes; Rep. Dean Urdahl (Grove City) for Capital Investments; Rep. Jim Nash (Waconia) for State and Local; Rep. Mary Franson (Alexandria) for Sustainable Infrastructure; and Rep. Chris Swedzinski (Ghent) for Climate and Energy.

Senate minority leads and the rank-and-file membership of all committees in both chambers had not been named as of this writing but are expected in December.

A quick glance reveals that many of the key leadership roles will be held by metro area legislators. In addition, there are 24 new senators, seven of which previously served in the House. There are 47 new House members; three are former members now returning to office. This means MMUA and its members will need to do a lot of education regarding municipal utilities, most of which are located outside of the metropolitan area.

With rumors that the State's budget surplus could exceed \$12 billion by the February forecast that controls the setting of the FY 2024 and 2025 biennial budget, Democratic leaders are going to want to be aggressive on climate change-based legislation, some of which will have direct impact on municipal utilities. By educating legislators on what utilities have done and continue to do to help "green the grid" and reduce greenhouse gas emissions, MMUA hopes to minimize unfunded mandates and artificial deadlines that stifle creativity and are frequently

counterproductive.

MMUA's government relations team will be contacting the new leaders and committee members both before the start of session and immediately following the gaveling in of the 2023 legislative session at noon on January 3, 2023. MMUA members are encouraged to reach out to their respective legislators to promote the importance and value of municipal utilities.

MMUA hopes a large number of legislators will participate in the 2023 legislative conference, planning for which is well under way. The conference is scheduled for January 24-25 at the Double Tree Hotel in downtown St. Paul. The legislative reception will be 4:30-7:00 p.m. on the 24th. Shuttle buses will run between the hotel and the Capitol complex. Be sure to invite your legislators and any

others you talk to.

On the federal level, Democrats have retained control of the Senate by having captured 51 seats after Georgia's special election on December 6th. Theoretically this means the party holds a two vote advantage. The December 9 announcement by Senator Krysten Sinema (D-AZ) that she will leave the Democratic Party and register as an independent has injected a level of uncertainty into this calculation, although Sinema has requested to keep her committee appointments under the Democrats. Typically, this would signal that she will still caucus with them, as do independents Bernie Sanders (I-VT) and Angus King (I-ME). Sinema has always been somewhat unpredictable, so even without her vote, Democratic Vice-President Harris can still

break any tie votes just as she has done during the first two years of the Biden administration.

The U.S. House, however, has flipped to being controlled by Republicans by a margin of 221 seats to 213. Rep. Kevin McCarthy (CA) is currently favored to succeed Rep. Nancy Pelosi (CA) as the next Speaker of the House. Of note for Minnesota, however, is that our own Rep. Tom Emmer is slated to become the Majority Whip, the third highest position in his caucus.

With a divided Congress, it seems unlikely any major policy changes will be adopted at the federal level over the next two years. Of concern will be whether funding will continue to be authorized for programs of benefit to municipal utilities, although this may be more of a long-term concern than an

immediate one. It is also possible we will see efforts to regulate more via administrative action than congressional action. In light of a recent U.S. Supreme Court ruling, an effort to govern by agency action could be met with litigation challenging an agency's express authority to take the action in question.

Finally, weekly with MMUA's Government Relations Advisory Group (GRAG) will begin on Friday, January 6, 2023. Already, the GRAG has held a couple of calls to help vet possible legislative changes to be sought in 2023. MMUA's Board of Directors discussed proposed legislative positions at their December 6 meeting as well. All of this feedback is now being used to create supporting materials for our visits to legislators in January.

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# Analysis of IRA finds positive energy impacts for U.S. and world economy

In a recent analysis, the Swiss banking and investment firm Credit Suisse examined the Inflation Reduction Act (IRA) and its projected impacts on the United States and world economies.

Its report on the topic captured several surprising potential aspects of the bill that may not be obvious on its face.

For one, Credit Suisse estimates the federal climate spending baseline of \$400 million will likely be double that amount with the tax credits included in the bill. Credit Suisse notes that this would just be the public spending, with private spending and investment adding even more. With those investments, the total financing of energy projects could reach \$1.7 trillion over ten years.

Credit Suisse estimates that Republican-leaning states will see more than 50% of the economic benefits from the bill, making it less likely the act would be repealed should Republicans gain full control

in Washington. Credit Suisse describes the Act as being beneficial to existing energy infrastructure as well as future development interests, such as the nascent development of carbon capture and hydrogen in the Houston, Texas region.

Credit Suisse sees the IRA as leveraging the United States into becoming the world's largest energy producer, both in fossil fuels and renewables. According to the report, it is possible the IRA could make the United States become a net exporter of solar panels and wind turbines.

The analysis reflects that many of the outcomes of the IRA are still unknown and there are many things that could affect the ultimate outcome. Some of these things include permitting issues (particularly around transmission) and the ability to stack tax credits.

Even with these pitfalls, the overall economic potential of the IRA looks to be significant.

# California grid operator navigates September heat wave

In a report released on November 2, the California Independent System Operator (CAISO) made clear that brownouts during a record-setting heat wave were only avoided with the help of new technologies and communication: some of them only put in place in the last few years.

The heat wave occurred during the span of September 5-8, when many areas of California broke century-old temperature records. CAISO also hit a new record as they set an all-time high peak load for the date of September 6 of 52,061 megawatts (MW).

This day of the heat wave would have likely resulted in brownouts for the operator in the past. However, this was not the case in 2022, and CAISO acknowledged several factors for this performance, including:

- More than 3,500 MW of battery storage, much of it brought online since summer of 2020.
- Enhanced communications between utilities, stakeholders, businesses, and state government.

- Market enhancements designed to encourage generation when demand is high.

- State programs that communicate with consumers when they should cut energy use if they can.

- Coordination with load-serving entities.

- Receipt of emergency energy assistance.

CAISO also acknowledged



that the late-summer wave was partially mitigated by cooler temperatures elsewhere in the region, which allowed CAISO to import power from adjacent states in the northwest and the southwest.

As CAISO entered the heat wave, it began coordinating communications and readied itself to issue a "Flex Alert" which calls for consumers to voluntarily conserve energy. This communication and others, as well as technology, allowed CAISO to make it through what otherwise might have been a very unpleasant experience for CAISO and consumers alike.

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## Xcel receives third data center proposal



An October 31 filing from Xcel Energy with the Minnesota Public Utilities Commission (PUC) shows a Fortune 100 company is actively exploring the construction of a \$700 million data center within Xcel's Minnesota service territory.

According to the filing, the company is still evaluating several locations for the data center, which is part of the reason it wants to remain anonymous at this time. The company is also committed to purchasing 100% renewable energy through its power purchases.

The data center could create 1,000 construction jobs and 50 jobs at the data center.

# Biden administration uses \$1.5 billion in IRA funds to upgrade DOE national laboratories; engage in r&d

On November 4, the Biden administration announced that \$1.5 billion from the Inflation Reduction Act (IRA) would be directed towards improving the Department of Energy's (DOE) Office of Science-managed national laboratories.

Funds will go to address everything from deferred maintenance and safety improvements at the labs to advanced technology investments.

The funds will also go towards the advancement of the Net-Zero Game Changers Initiative, which aims to jumpstart the development of innovative clean energy technologies. The Biden



administration has identified five areas of focus for this project, including efficient building heating and cooling, net-zero aviation, net-zero power grid

and electrification, industrial products and fuels for a net-zero, circular economy, and fusion energy at scale. The five initial priorities were described as supporting the administration goal of cutting greenhouse gases (GHG) by 50-52% by 2030 and reaching net-zero no later than 2050.

The announcement was made at the DOE's Argonne National Laboratory in Lemont, Illinois. The Office of Science is a component of the DOE and is the lead federal agency supporting fundamental scientific research for energy and the nation's largest supporter of basic research in the physical sciences.

# EPA publishes expanded contaminant candidate list for regulation of drinking water

On November 2, the United States Environmental Protection Agency (EPA) published its Final Fifth Drinking Water Contaminant Candidate List (CCL 5) for regulation of water under the Safe Drinking Water Act.

In recognition of growing scientific understanding about per- and polyfluoroalkyl substances (PFAS), a set of PFAS substances was added to the list. Also included were 66 chemicals, 13 microbes, cyanotoxins, and disinfection byproducts.

The list was developed with the help of public input and scientific examination. Now that it has been developed, the CCL 5 list will act as the basis for the EPA's regulatory considerations for drinking water over the next five-year cycle of the SDWA.

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On October 28, the **Detroit Lakes City** Council approved a remodeling project that will expand and improve the city's existing city hall. Once complete, the building will grow in size by 3,400 square feet. The project will cost \$7.7 million.

**Eitzen** will have fiber optic cable installed throughout town. The installation will be owned by Central Cable.



**Grand Marais** and other parts of the North Shore saw mid-November snowfall that left the area with a healthy snowpack. 20 inches of snow fell on the Gunflint Trail, and 8.8 inches fell in **Two Harbors**.

**Moorhead** voters approved raising the city sales tax by .50% to finance a new community center and public library. The project will cost \$31 million and according to Mayor Shelly Carlson will help with the redevelopment of downtown.

A new \$2.4 million housing project has been proposed for **Olivia** on the site of the old Renville County Hospital and Clinic. The project will include several single-family and twin homes that would be available as rentals.

The week of Veterans' Day, **Owatonna Public Utilities** helped out with an initiative called "Operation Green Light" that seeks to provide more recognition for veterans by lighting buildings with green lights. OPU installed green lights in the county Administration Building at no cost.

On November 3, **Rochester Public Utilities** was briefly evacuated when a leaking refrigerator caused alarms in the building to go off. Fire crews were on the scene around 2 pm and made sure everything was fine.

**Rushford's** Highway 30 Project has wrapped up for the year. The project reconstructed a half mile of roadway and replaced sewer, water, and downtown

lighting. A few detail items like retaining wall staining will be finished next year.

Federal Emergency Management Agency (FEMA) officials were in **Thief River Falls** in early November to assess city infrastructure that was damaged after a snowstorm on April 13 and rain and flooding on April 23. The city is seeking remediation in three former city parks and reimbursement for repair work it has already done in town.

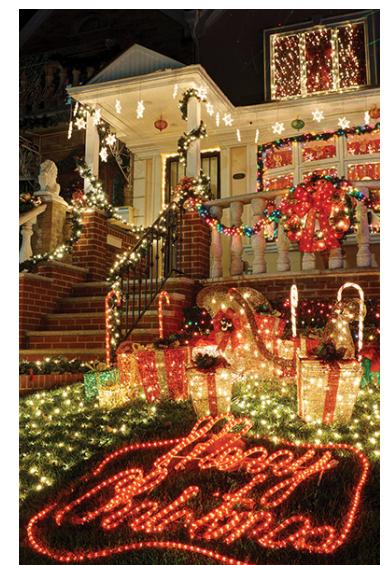
**Warren-Alvarado-Oslo** approved their school bond in the



November election. The \$24.9 million bond referendum will fund a new addition between the existing high school and elementary school in Warren, as well as renovations and other

capital improvements district wide. Warren also passed sales and use tax of .50% to finance the construction of a new childcare center in the city.

**Worthington Public Utilities** is co-sponsoring the city's Holiday Lighting Contest. Light displays will be judged on best use of color, most original, best composition, and most spectacular or best expression of Christmas. Winner will receive a credit on their December utility bill. FORWARD Worthington and RE/MAX Premier Realty co-sponsored the event.



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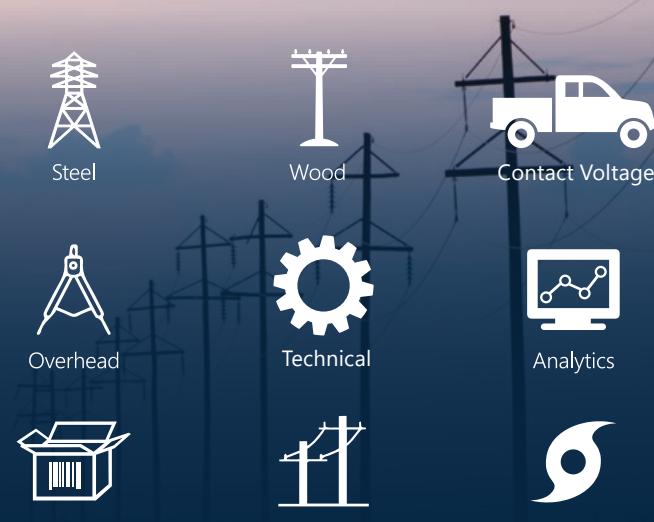
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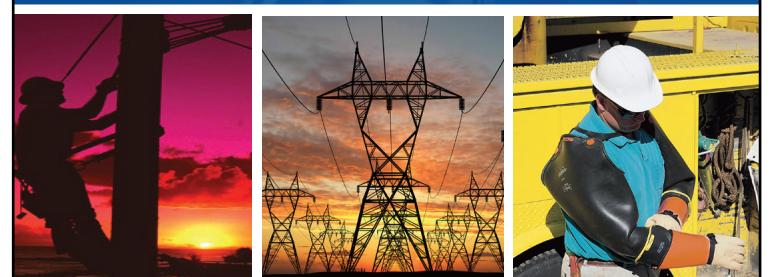
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Many public facilities in Hungary have been closing due to surging energy costs. Gas bills have increased sevenfold in some places, causing cities to close venues like theaters, pools, and sports arenas. The capital, Budapest, has kept its public facilities open so far, but this may change if prices rise further.

In early November, China announced the country would maintain coal price caps in 2023 and punish suppliers who fail to deliver on contracts. These efforts are designed to prevent any baseload shortfalls in the near term.

The War in Ukraine continues to complicate the winter heating season in Europe. In mid-November, Russia began aggressively targeting Ukraine's power infrastructure, aiming more than 85 missiles at critical power plants and substations in Ukrainian territory. Ukrainian Energy Minister Herman Haluschenko described the attacks as the biggest escalation against the country's power facilities in the war so far.

On November 17, Etihad Airlines, the national airline of the United Arab Emirates, signed an agreement to pursue net-zero carbon emissions.

On November 20, the Iranian Energy Minister said Iran had completed an "initial synchronization" between its power grid and the grids of Russia, Armenia, and Azerbaijan. Iran is hoping to boost its connection with its neighbors and also get help as it deals with U.S. sanctions on its power grid.

On November 21, Domino's Pizza announced that it would be adding more than 800 2023 Chevy Bolt EVs to its pizza delivery fleet in the United States. Domino's will use the cars to cut fuel costs and provide a vehicle to delivery drivers who do not have a car of their own.

*Scientific American* (SA) reported on November 22 that U.S. renewable energy generation will surpass coal and nuclear in 2022. Citing U.S. Energy Information Administration sources (EIA), SA stated that wind, solar, and hydro combined will generate around 22% of U.S. electricity by the end of this year.

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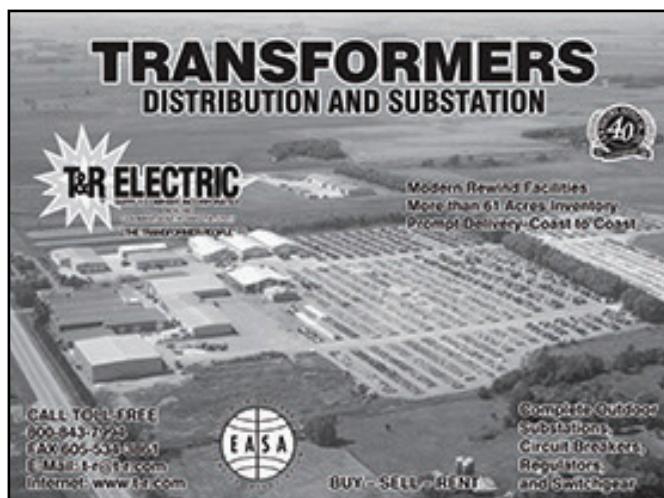


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<sup>3</sup> [www.bls.gov/oes/2017/may/oes472152.htm](http://www.bls.gov/oes/2017/may/oes472152.htm)

On November 22, the World Health Organization said that as many as 10 million Ukrainians remain without power and face life-threatening conditions. Blackouts in the country could continue for months according to YASNO, a major energy provider in the country.

On November 21, California's Diablo Canyon Nuclear Power Plant received \$1.1 billion in conditional funding from the Biden Administration. The funds will go to keep the plant operating past its previously planned 2025 shutdown date. Diablo Canyon supplies 8% of California's electricity.

TenneT, which operates the power grid in the Netherlands and large parts of Germany, said on November 17 that it was looking into ways to have customers avoid using the grid during peak hours in exchange for financial compensation.

On November 22, Caterpillar, Inc. completed the first successful demonstration of its battery electric 793 large mining truck. The prototype was built at Caterpillar's Tucson Proving Ground in Green Valley, Arizona.

On November 18, NextEra Energy Partners signed an agreement to purchase a group of solar and wind installations for \$805 million.

In late November, the worldwide biogas market reached a valuation of \$61.2 billion and is expected to grow 6.8% each year until 2031.

On November 23, Governor Kathy Hochul, (D) New York, signed a law that prohibits cryptocurrency miners in the state from using carbon-based energy.

In 2022, China will set global records for both clean energy use and coal-fired electricity emissions. Compared to the same period last year, the country's electricity generation from wind and solar rose 25% and 30%, respectively. However, China's coal use also grew significantly.

Some Alaskan gas utilities may need to import liquefied natural gas (LNG) in the next few years as easily retrievable local gas supplies wane in parts of the state, including areas around Anchorage.

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# Office of Nuclear Energy announces four American nuclear power plants, including Prairie Island, will produce clean hydrogen

The Office of Nuclear Energy, an agency of the United States Department of Energy (DOE) has announced four hydrogen demonstration projects at existing American nuclear power plants, including Prairie Island in Red Wing, Minnesota.

The projects will include both high temperature and low temperature electrolysis setups, which is the process for splitting water into pure hydrogen and oxygen. High-temperature electrolysis is considered to be more efficient than low-temperature electrolysis.

Hydrogen will be produced at the following plants:

- Nine Mile Point Nuclear Power Station in Oswego, New York, will produce clean hydrogen by the end of 2022. Their low-temperature electrolysis system will be the first nuclear-powered clean hydrogen setup in the United States.
- Davis-Besse Nuclear Power Station in Oak Harbor, Ohio, will produce clean hydrogen by 2023. It will also feature a low-temperature electrolysis system.
- Prairie Island Nuclear Generating Plant in Red Wing,

Minnesota will produce clean hydrogen by 2024. It will have a high-temperature electrolysis system.

- Palo Verde Generating Station in Tonopah, Arizona will also produce clean hydrogen by 2024. Their low-temperature electrolysis system may be used to make chemicals or other fuels.

These projects will support DOE's goal of reducing the cost of clean hydrogen by 80% to \$1 per kilogram (kg) in the next decade.

## United States' climate change goals will require significant growth of renewables and baseload power

A report released at the United Nations Climate Change Conference (COP26) in Sharm el-Sheikh, Egypt highlighted the distance the United States still needs to go to meet its climate change goals.

The study found the United States must significantly grow two energy types to reach 2050 carbon goals. The first type is firm capacity, which includes nuclear, geothermal, hydro, and carbon capture. Firm capacity can provide stable baseload power when intermittent resources are not producing. The second type

is intermittent energy, which includes wind, solar, and other niche types of power.

According to the report, firm capacity will need to grow between 25% and 42%, from a current 850 gigawatts (GW) to an estimated 1140-1450 GW. Intermittent energy sources will need to grow even more significantly, from a current 200 GW to an estimated 800-3700 GW. Combined, firm and intermittent energy sources would need to grow between 160% and 480%.

The report noted natural gas with carbon capture and



hydrogen fuel will be crucial in providing baseload power in this future clean energy environment. What is even more striking is the growth in renewables that will be required to meet the 2050 decarbonization goals.

# Rice University invents new method to turn sewer gas into hydrogen fuel

Scientists at Rice University have found an innovative way to turn unpleasant sewer gas into increasingly valuable hydrogen gas.

The process is called "plasmonic photocatalysis" and uses silicon dioxide powder that is coated with gold nanoparticles. These nanoparticles act as catalysts when exposed to certain wavelengths of light.

When the mixture is exposed

to a light emitting diode (LED) in a reactor, the sewer gas (hydrogen sulfide) is split into its constituent elements hydrogen and sulfur.

The team that invented the technology believes this process will be less expensive than current ways of remediating sewer gas. Hydrogen sulfide also occurs in crude petroleum and natural gas, opening up even more intriguing areas in which this process could be used.

## State regulators reject appeal on 2021 Texas winter storm costs

On December 7, Minnesota regulators on the Public Utilities Commission (PUC) voted not to reconsider their decision disallowing \$55 million in costs Xcel Energy, Center Point Energy, and Great Plains Natural Gas had hoped to recoup from customers.

Both Minnesota Attorney General Keith Ellison, and Kim Havey, director of sustainability for the City of Minneapolis, had opposed reconsideration on the grounds that the utilities should have had better planning and storage mechanisms in place.

The PUC voted on each company's petition separately, and they were all denied on a 4-1 vote. Commissioner Valerie Means stood alone in agreeing with the companies.

On November 8, the three

companies challenged the Minnesota Public Utilities Commission (PUC) decision of August 11 that the utilities should pay \$55 million in consumer costs related to the 2021 Texas winter storm.

At that time, the PUC found that the utilities had not done enough to plan ahead before the 2021 storm, causing them to mismanage the spike in rates and overcharge customers. The \$55 million in costs is less than 10% of the increased costs consumers had to bear in February of 2021.

Xcel Energy is the only one of the affected utilities that is based in Minnesota. All three are investor owned.

## Upcoming Events

For more information, see the Events Calendar at [www.mmua.org](http://www.mmua.org) or call MMUA at 763-551-1230.

### Legislative Conference

**January 24-25**  
**Double Tree Hotel**  
**St. Paul**

MMUA's Legislative Conference is the primary opportunity for municipal utilities to inform and influence state lawmakers. A strong turnout ensures that our message is heard. Register by January 10 at [mmua.org/legislative-conference-2023](http://mmua.org/legislative-conference-2023).

### NESC® Regional Workshops

**January 31-February 16**  
**Around the state**

MMUA is holding five one-day seminars around the state to discuss changes to the 2023 edition of the National Electric Safety Code (NESC®). Learn about small cell and communication equipment placement and more. Register by January 9 at [mmua.org/events/calendar/month/2023-02-01](http://mmua.org/events/calendar/month/2023-02-01).

### Meter School and Pre-Conference

**February 7-10**  
**MMUA Training Center**  
**Marshall**

Meter School is an opportunity to obtain hands-on technical electric metering training. Basic/intermediate and advanced tracks are available. Register online at [mmua.org/meter-2023](http://mmua.org/meter-2023).

### Emergency Preparedness and Restoration Conference

**February 22-23**  
**Holiday Inn**  
**St. Cloud**

Join other hometown utility and city professionals at this interactive conference. Increase your understanding of the mutual aid process and strengthen relationships with fellow industry professionals. Register by February 1 at [mmua.org/event/emergency-2023](http://mmua.org/event/emergency-2023).

## Leadership Enrichment Programs

MMUA offers two popular and well-regarded leadership enrichment programs: Leadership Academy and Stepping Into Leadership.

Both programs will begin new cohorts in April 2023. Please watch your email or reach out to Rita Kelly at [r.kelly@mmua.org](mailto:r.kelly@mmua.org) for more information.